For Alternates 11 and 12, the existing U.S. Route 20 will be closed east of the village of Lena between Illinois Route 73 and Wagner Road. In addition, Wagner Road will be closed. A new local road will be constructed east from Illinois Route 73 to mitigate access problems. However, there will still be no way to cross U.S. Route 20 from the south between Illinois Route 73 and Unity Road in Erin Township. The area southeast of Lena contains several nonresidential land uses, such as the ethanol plant or the Old Mill Home Furnishings store, which could, in the event of a major fire or emergency, require the support of fire protection and emergency services from the area beyond Lena. It is most likely that such additional support would be called from Freeport. Supporting vehicles would most likely have to travel west to the Expressway interchange at Illinois Route 73, and then back east for a mile or more to reach the site of an emergency. Vehicle travel times could be reduced by the proposed project, particularly in Alternate 12, which would involve a section of limited access highway. However, the extra time spent backtracking from Illinois Route 73 could still add to response times.

4.1.4 Residential and Farmstead Displacements

Table 4-19 summarizes the residential, farmstead, and commercial building displacements that can be expected to result from construction of the Freeway and Expressway alternates. Tables 4-20 through 4-27 show the number of displacements by municipality along the Alternate routes. The data is divided into residences (farm and non-farm), farm buildings, and commercial buildings. Further detail regarding farm displacements is provided in the Agricultural Resources Technical Report, which has been prepared separate to this DEIS.

Alternates 11 and 12 would involve significantly more non-farm residential displacement than Alternates 1 – 10, because Alternates 11 and 12 would be constructed on old U.S. Route 20 for much of its route, thereby affecting houses close to the road. Alternates 1-10 would be constructed mostly away from the existing roadway system, and would consequently affect mostly farm residences, which are often set well back from existing roads. In terms of total housing displacements, Alternates 11 and 12 would affect nearly twice as many houses as Alternates 1-10, primarily because of the non-farm residences.

In accordance with the Uniform Assistance and Real Property Acquisition Act of 1970 (as amended), a program of relocation assistance and payment is available through the Department. Policies implemented by the Department attempt to ensure that displaced persons receive fair and equitable treatment without discrimination and that the construction of any highway project designed for the benefit of the public will not result in undue hardship to any individual or group. Payments covering moving costs and supplemental housing and advisory assistance services are offered in addition to the state's payment for real property. If comparable quality housing is unavailable at the time of displacement, relocation payments based on last resort housing may be necessary.

Relocation impacts will vary with three principal factors:

- Timing of construction activities.
- The availability of comparable housing in the real estate market.
- Whether or not the residence is part of a farm.

The proposed project will be carried out over a 15-year period in three 6-year phases, roughly from east to west (see below). This means that there will be three periods within which residents of displaced housing will have to find new hones. Assuming that the project is divided into three roughly equal sections, the following housing relocations would be necessary by phase of the project (using the data from Tables 4-19 through 4-27):

TABLE 4-19
PROPERTY DISPLACEMENTS
U.S. ROUTE 20, GALENA TO FREEPORT
SUMMARY COMPARISON OF ALTERNATES

		RESIDENCES DISPLACED		
Alternate Number	**Route Description**	*Residences*	*Farmstead Residences*	*Total Residences*
1	Long Hollow Freeway	9	25	34
2	Long Hollow Freeway w/Stockton Alt.	9	25	34
3, 7	Irish Hollow Freeway	11	23	34
4, 9	Irish Hollow Freeway w/Stockton Alt.	11	23	34
5, 8	Irish Hollow Freeway w/Tunnel	10	21	31
6, 10	Irish Hollow Freeway w/Tunnel w/Stockton Alt.	10	21	31
11	Expressway Eleroy Alt.	30	34	64
12	Expressway Lena Alt.	28	25	53

		FARM BUILDINGS DISPLACED		
Alternate Number	**Route Description**	*Major Farm Buildings**	*Ancillary Structures***	*Total Farmstead Buildings*
1	Long Hollow Freeway	27	76	103
2	Long Hollow Freeway w/Stockton Alt.	30	73	103
3, 7	Irish Hollow Freeway	9	37	46
4, 9	Irish Hollow Freeway w/Stockton Alt.	28	67	95
5, 8	Irish Hollow Freeway w/Tunnel	24	69	93
6, 10	Irish Hollow Freeway w/Tunnel w/Stockton Alt.	27	66	93
11	Expressway Eleroy Alt.	44	103	147
12	Expressway Lena Alt.	33	100	143

		Commercial Buildings Displaced
Alternate Number	**Route Description**	*Number of Buildings*
1	Long Hollow Freeway	3
2	Long Hollow Freeway w/Stockton Alt.	3
3, 7	Irish Hollow Freeway	3
4, 9	Irish Hollow Freeway w/Stockton Alt.	3
5, 8	Irish Hollow Freeway w/Tunnel	3
6, 10	Irish Hollow Freeway w/Tunnel w/Stockton Alt.	3
11	Expressway Eleroy Alt.	6
12	Expressway Lena Alt.	5

The Preferred Alternate is highlighted.

* Major Farm Buildings include large barns, grain bins, and silos.

** Ancillary Structures include sheds and other outbuildings.

TABLE 4-20
PROPERTY DISPLACEMENTS
U.S. ROUTE 20 FREEPORT TO WOODBINE
FREEWAY ALTERNATES
(Includes Eastern Parts of Alternates 1, 3, 5, 7, 9)

	RESIDENCES DISPLACED		
Location	*Residences*	*Farmstead Residences*	*Total Residences*
Stockton Township	*3*	2	5
Village of Stockton			0
Nora Township			0
Rush Township			0
Wards Grove Township		1	1
Woodbine Township			0
JO DAVIESS COUNTY TOTAL	*3*	*3*	0
Erin Township		4	4
Harlem Village		3	3
Kent Township		2	2
West Point Township			0
Village of Lena			0
STEPHENSON COUNTY TOTAL	0	*9*	9

Total Number of Residences **15**

	FARM BUILDINGS DISPLACED		
Location	*Major Farm Buildings*	*Ancillary Structures***	*Total Farmstead*
Stockton Township	1	11	12
Village of Stockton			0
Nora Township			0
Rush Township			0
Wards Grove Township			1
Woodbine Township			0
JO DAVIESS COUNTY TOTAL	1	11	12
Erin Township	5	15	20
Harlem Village	2	9	11
Kent Township	1	2	3
West Point Township			0
Village of Lena			0
STEPHENSON COUNTY TOTAL	8	26	34

Total Major Farm Buildings **9**
Total Ancillary Structures **37**
Total Farm Buildings **46**

	COMMERCIAL BUILDINGS DISPLACED
Location	*Number of Buildings*
Stockton Township	
Village of Stockton	
Nora Township	
Rush Township	
Wards Grove Township	
Woodbine Township	
JO DAVIESS COUNTY TOTAL	0
Erin Township	
Harlem Village	
Kent Township	1
West Point Township	
Village of Lena	
STEPHENSON COUNTY TOTAL	1

Total Commercial Buildings **1**

*** Major Farm Buildings include large barns, grain bins, and silos.**
**** Ancillary Structures include sheds and other outbuildings.**

TABLE 4-21
PROPERTY DISPLACEMENTS
U.S. ROUTE 20 FREEPORT TO WOODBINE
FREEWAY ALTERNATES
(Includes Eastern Parts of Alternates 2, 4, 6, 8, 10)

Location	RESIDENCES DISPLACED		
	Residences	*Farmstead Residences*	*Total Residences*
Stockton Township	*3*	2	5
Village of Stockton			0
Nora Township			0
Rush Township			0
Wards Grove Township		1	1
Woodbine Township			0
JO DAVIESS COUNTY TOTAL	*3*	*3*	6
Erin Township		4	4
Harlem Village		3	3
Kent Township		2	2
West Point Township			0
Village of Lena			0
STEPHENSON COUNTY TOTAL	0	*9*	9

Total Number of Residences 15

Location	FARM BUILDINGS DISPLACED		
	Major Farm Buildings	*Ancillary Structures***	*Total Farmstead*
Stockton Township	4	8	12
Village of Stockton			0
Nora Township			0
Rush Township			0
Wards Grove Township			1
Woodbine Township			0
JO DAVIESS COUNTY TOTAL	4	8	12
Erin Township	5	15	20
Harlem Village	2	9	11
Kent Township	1	2	3
West Point Township			0
Village of Lena			0
STEPHENSON COUNTY TOTAL	8	26	34

Total Major Farm Buildings 12
Total Ancillary Structures 34
Total Farm Buildings 46

Location	COMMERCIAL BUILDINGS DISPLACED
	Number of Buildings
Stockton Township	
Village of Stockton	
Nora Township	
Rush Township	
Wards Grove Township	
Woodbine Township	
JO DAVIESS COUNTY TOTAL	0
Erin Township	
Harlem Village	
Kent Township	1
West Point Township	
Village of Lena	
STEPHENSON COUNTY TOTAL	1

Total Commercial Buildings 1

*** Major Farm Buildings include large barns, grain bins, and silos.**
**** Ancillary Structures include sheds and other outbuildings.**

TABLE 4-22
PROPERTY DISPLACEMENTS
U.S. ROUTE 20 FREEPORT TO WOODBINE
EXPRESSWAY ALTERNATE (Eastern Part of Alternate 11)

	RESIDENCES DISPLACED		
Location	*Residences*	*Farmstead Residences*	*Total Residences*
Stockton Township	4	3	7
Village of Stockton			0
Nora Township			0
Rush Township			0
Wards Grove Township		1	1
Woodbine Township		1	1
JO DAVIESS COUNTY TOTAL	4	5	9
Erin Township		5	5
Harlem Village	4	7	11
Kent Township	7	3	10
West Point Township			0
Village of Lena			0
STEPHENSON COUNTY TOTAL	11	15	26

Total Number of Residences 35

	FARM BUILDINGS DISPLACED		
Location	*Major Farm Buildings*	*Ancillary Structures***	*Total Farmstead*
Stockton Township		3	3
Village of Stockton			0
Nora Township			0
Rush Township			0
Wards Grove Township	4	3	7
Woodbine Township	6	1	7
JO DAVIESS COUNTY TOTAL	10	7	17
Erin Township		6	6
Harlem Village	3	17	20
Kent Township	5	23	28
West Point Township			0
Village of Lena			0
STEPHENSON COUNTY TOTAL	8	46	54

Total Major Farm Buildings 18
Total Ancillary Structures 53
Total Farm Buildings 71

	COMMERCIAL BUILDINGS DISPLACED
Location	*Number of Buildings*
Stockton Township	
Village of Stockton	
Nora Township	
Rush Township	
Wards Grove Township	
Woodbine Township	3
JO DAVIESS COUNTY TOTAL	3
Erin Township	1
Harlem Village	
Kent Township	
West Point Township	
Village of Lena	
STEPHENSON COUNTY TOTAL	1

Total Commercial Buildings 4

*** Major Farm Buildings include large barns, grain bins, and silos.**
**** Ancillary Structures include sheds and other outbuildings.**

TABLE 4-23
PROPERTY DISPLACEMENTS
U.S. ROUTE 20 FREEPORT TO WOODBINE
EXPRESSWAY ALTERNATE (Eastern Part of Alternate 12)

	RESIDENCES DISPLACED		
Location	*Residences*	*Farmstead Residences*	*Total Residences*
Stockton Township	4	3	7
Village of Stockton			0
Nora Township			0
Rush Township			0
Wards Grove Township		1	1
Woodbine Township		1	1
JO DAVIESS COUNTY TOTAL	4	5	9
Erin Township	2		2
Harlem Village		3	3
Kent Township	7	3	10
West Point Township			0
Village of Lena			0
STEPHENSON COUNTY TOTAL	9	6	15

Total Number of Residences 24

	FARM BUILDINGS DISPLACED		
Location	*Major Farm Buildings*	*Ancillary Structures***	*Total Farmstead*
Stockton Township		3	3
Village of Stockton			0
Nora Township			0
Rush Township			0
Wards Grove Township	4	3	7
Woodbine Township	6	1	7
JO DAVIESS COUNTY TOTAL	10	7	17
Erin Township	1	11	12
Harlem Village	1	9	10
Kent Township	5	23	28
West Point Township			0
Village of Lena			0
STEPHENSON COUNTY TOTAL	7	43	50

Total Major Farm Buildings 17
Total Ancillary Structures 50
Total Farm Buildings 67

	COMMERCIAL BUILDINGS DISPLACED
Location	*Number of Buildings*
Stockton Township	
Village of Stockton	
Nora Township	
Rush Township	
Wards Grove Township	
Woodbine Township	3
JO DAVIESS COUNTY TOTAL	3
Erin Township	
Harlem Village	
Kent Township	
West Point Township	
Village of Lena	
STEPHENSON COUNTY TOTAL	0

Total Commercial Buildings 3

*** Major Farm Buildings include large barns, grain bins, and silos.**
**** Ancillary Structures include sheds and other outbuildings.**

TABLE 4-24
PROPERTY DISPLACEMENTS
U.S. ROUTE 20, GALENA TO FREEPORT
EXPRESSWAY ALTERNATE (Western Parts of Alternates 11 and 12)

	RESIDENCES DISPLACED		
Location	*Residences*	*Farmstead Residences*	*Total Residences*
Rawlins	4	2	6
East Galena Township	2	2	4
Rice Township			0
Elizabeth Township	3	8	11
Woodbine Township	6	2	8
JO DAVIESS COUNTY TOTAL	15	14	29

Total Number of Residences 29

	FARM BUILDINGS DISPLACED		
Location	*Major Farm Buildings**	*Ancillary Structures***	*Total Farmstead Buildings*
Rawlins	2	13	15
East Galena Township	5	4	9
Rice Township	1		1
Elizabeth Township	8	14	22
Woodbine Township	10	19	29
JO DAVIESS COUNTY TOTAL	26	50	76

Total Major Farm Buildings 26
Total Ancillary Structures 50
Total Farm Buildings 76

	COMMERCIAL BUILDINGS DISPLACED
Location	*Number of Buildings*
Rawlins	
East Galena Township	2
Rice Township	
Elizabeth Township	
Woodbine Township	
JO DAVIESS COUNTY TOTAL	2

Total Commercial Buildings 2

* Major Farm Buildings include large barns, grain bins, and soils.
** Ancillary Structures include sheds and other outbuildings.

TABLE 4-25
PROPERTY DISPLACEMENTS
U.S. ROUTE 20, GALENA TO FREEPORT
FREEWAY ALTERNATES
(Western Parts of Alternates 1 and 2)

	RESIDENCES DISPLACED		
Location	*Residences*	*Farmstead Residences*	*Total Residences*
Rawlins	4	2	6
East Galena Township	2	2	4
Rice Township			0
Elizabeth Township		6	6
Woodbine Township		3	3
JO DAVIESS COUNTY TOTAL	6	13	19

Total Number of Residences 19

	FARM BUILDINGS DISPLACED		
Location	*Major Farm Buildings**	*Ancillary Structures***	*Total Farmstead Buildings*
Rawlins	2	13	15
East Galena Township	5	4	9
Rice Township	1		1
Elizabeth Township	5	8	13
Woodbine Township	5	14	19
JO DAVIESS COUNTY TOTAL	18	39	57

Total Major Farm Buildings 18
Total Ancillary Structures 39
Total Farm Buildings 57

	COMMERCIAL BUILDINGS DISPLACED
Location	*Number of Buildings*
Rawlins	1
East Galena Township	1
Rice Township	
Elizabeth Township	
Woodbine Township	
JO DAVIESS COUNTY TOTAL	2

Total Commercial Buildings 2

* Major Farm Buildings include large barns, grain bins, and soils.
** Ancillary Structures include sheds and other outbuildings.

TABLE 4-26
PROPERTY DISPLACEMENTS
U.S. ROUTE 20, GALENA TO FREEPORT
IRISH HOLLOW FREEWAY ALTERNATE
(Western Parts of Alternates 3, 4, 7, 9)

	RESIDENCES DISPLACED		
Location	*Residences*	*Farmstead Residences*	*Total Residences*
Rawlins	4	2	6
East Galena Township	2	2	4
Rice Township			0
Elizabeth Township	1	2	3
Woodbine Township	1	5	6
JO DAVIESS COUNTY TOTAL	8	11	19

Total Number of Residences 19

	FARM BUILDINGS DISPLACED		
Location	*Major Farm Buildings**	*Ancillary Structures***	*Total Farmstead Buildings*
Rawlins	2	13	15
East Galena Township	5	4	9
Rice Township	1		1
Elizabeth Township	3	9	12
Woodbine Township	5	7	12
JO DAVIESS COUNTY TOTAL	16	33	49

Total Major Farm Buildings 16
Total Ancillary Structures 33
Total Farm Buildings 49

	COMMERCIAL BUILDINGS DISPLACED
Location	*Number of Buildings*
Rawlins	1
East Galena Township	1
Rice Township	
Elizabeth Township	
Woodbine Township	
JO DAVIESS COUNTY TOTAL	2

Total Commercial Buildings 2

* Major Farm Buildings include large barns, grain bins, and soils.
** Ancillary Structures include sheds and other outbuildings.

TABLE 4-27
PROPERTY DISPLACEMENTS
U.S. ROUTE 20, GALENA TO FREEPORT
IRISH HOLLOW FREEWAY TUNNEL ALTERNATE
(Western Parts of Alternates 5, 6, 8, 10)

	RESIDENCES DISPLACED		
Location	*Residences*	*Farmstead Residences*	*Total Residences*
Rawlins	4	2	6
East Galena Township	2	2	4
Rice Township			0
Elizabeth Township	1	2	3
Woodbine Township		3	3
JO DAVIESS COUNTY TOTAL	7	9	16

Total Number of Residences 16

	FARM BUILDINGS DISPLACED		
Location	*Major Farm Buildings**	*Ancillary Structures***	*Total Farmstead Buildings*
Rawlins	2	13	15
East Galena Township	5	4	9
Rice Township	1		1
Elizabeth Township	3	9	12
Woodbine Township	4	6	10
JO DAVIESS COUNTY TOTAL	15	32	47

Total Major Farm Buildings 15
Total Ancillary Structures 32
Total Farm Buildings 47

	COMMERCIAL BUILDINGS DISPLACED
Location	*Number of Buildings*
Rawlins	1
East Galena Township	1
Rice Township	
Elizabeth Township	
Woodbine Township	
JO DAVIESS COUNTY TOTAL	2

Total Commercial Buildings 2

* Major Farm Buildings include large barns, grain bins, and soils.
** Ancillary Structures include sheds and other outbuildings.

1. Years 1 - 6: Freeport - Stockton, including Harlem, Erin, Kent, Wards Grove, and Stockton townships

2. Years 5 - 11: Stockton - Elizabeth, including Stockton, Woodbine, and Elizabeth townships.

3. Years 10 - 15: Elizabeth - Galena, including Elizabeth, Rice, East Galena, and Rawlins townships.

Data from the Freeport-Galena Area Association of Realtors, Inc., was used to estimate housing availability within or near these areas. Table 4-28 shows that number of houses displaced in each time period next to the estimated number of houses coming onto the market during each construction period. Estimation of the number of houses coming onto the market was a function of the number of houses on the market at a specific time (September, 1999: not including the Galena Territory or Apple Canyon Lake) and the average time each house was on the market. Only single family houses were included in this calculation.

Table 4-28 may understate the actual number of houses which would become available during each construction period, since each period is six years, not one year, long. While the period of property acquisition will not last for six years in any given area, it is likely to last for more than one year because of construction staging. Therefore, it should not be difficult for displaced residents to find comparable housing within the general area of their present residences.

Farm residence displacements may present some unique difficulties. Some farm families may opt to construct a new home elsewhere on their land, as long as the farm remains viable after the displacement. However, if the farm is not viable after the displacement, the search for housing is complicated by the necessity to find a comparable farm as well. The implications of this are discussed further in the Agriculture Technical Report which has been prepared separate from this DEIS.

4.1.5 Economic

4.1.5.1 Existing Business Displacements

A small number of business displacements would be required for the proposed project. Alternates 1 - 10 would displace only 3 businesses each. Alternates 11 and 12 would displace between 5 and 6 businesses. Tables 4-19 through 4-27 present the business displacements for each of the Alternates.

The displaced businesses are all small retail establishments, none employing more than five people. Examples are an antiques mall and a flower shop-convenience store. None of the businesses that would be displaced are "one of a kind" whose loss would result in the absence of a particular service or type of goods in a community. No major industrial facilities will be displaced.

With regard to displaced businesses, there is ample land available in close proximity to any business that could be potentially displaced that is suitably zoned with adequate infrastructure.

In accordance with the Uniform Assistance and Real Property Acquisition Act of 1970 (as amended), a program of relocation assistance and payment will be available through the Department. Policies implemented by the Department attempt to ensure that displaced businesses receive fair and equitable treatment without discrimination and that the construction of any highway project designed for the benefit of the public will not result in undue hardship to

TABLE 4-28
U.S. ROUTE 20 IMPROVEMENTS HOUSING DISPLACEMENTS AND HOUSES AVAILABLE BY CONSTRUCTION PERIOD

Construction Period	Residences Displaced*	Estimated Housing Available in Any Year**
Years 1 - 6	26	171
Years 5 - 11	19	102
Years 10 - 15	21	684

* Maximum number of houses for any Alternate, as shown on Tables 4-20 - 4-28.

** Average time on market = 117 days, or about 1/3 year. Therefore, the number of houses available in any year-long period = the number of houses on the market at any given times, multiplied by 3. Houses in the City of Freeport, Galena Territories, and Apple Canyon Lake were excluded from the calculations.

any individual or group. Payments covering moving costs and advisory assistance services are offered in addition to the state's payment for real property.

4.1.6 Employment, Output and Income Impact

The proposed project would stimulate the regional economy during the construction phase. Economic impacts would result from material purchases in the region, construction payrolls, and related indirect and induced spending, or "multiplier effects." In assessing the economic impacts of the project, it is important to recognize that economic benefits associated with the construction phase would occur for a relatively limited time during the actual construction.

An input-output model developed by the U.S. Department of Commerce, Bureau of Economic Analysis (BEA) has been used to quantify the economic effects of the proposed project, including the effects of material purchases and payroll-related impacts. The model provides the basic methodology for the assessment of potential economic impacts, with modifications to produce multipliers specific to the region of the proposed action.

For the purpose of quantifying the economic impacts of the proposed action, it is assumed that impacts of material purchases and payrolls during the construction phase of the project would occur primarily within a two-county area consisting of Jo Daviess and Stephenson Counties in Illinois. Payroll impacts in particular are likely to be centered primarily within these two counties since employees are likely to live within a commuting distance of one hour or less from the project's construction site.

In determining the economic impacts of the project/construction budget, the following assumptions were made:

- *Construction costs and period.* The construction costs do not include property acquisition costs, and will be expended over a 180-month (15-year) period.

- *Labor cost share.* A labor-to-materials expenditure ratio of 20/80; i.e., 20 percent of the total construction budget was assumed to be expended on labor and 80 percent on materials, based on the highway statistics from the FHWA.

- *Estimates of local purchases.* The degree to which materials are likely to be purchased in the local region were projected using location quotient analysis which measures the concentration of local economic activity in each major industrial sector. The location quotients were calculated to reflect the degree to which particular goods and services are likely to be supplied within a given region.

- *Adjustment for employment of non-local labor.* The percentage of construction employees likely to be hired in the project area was determined from an examination of the journey to work travel patterns of the region. Approximately 90 percent of the construction labor force is expected to come from within the two-county area.

Table 4-29 provides a summary of the estimated economic impact in terms of sales output, employment, and income generated by each of the alternates. Table 4-29 suggests that the total construction budget ranges from as low as $452 million for Alternate 11 to as high as $633 million for Alternate 5. Positively related to the total construction budgets, the project construction would generate $221 to $310 million total sales, 5,362 to 7,514 total employment, and $96 to $134.5 million total income.

The construction of the proposed project will have the following direct effects on the regional economy:

- *Total material purchases*. It is estimated that, of the total construction materials purchases budget from $361.2 million to $506.1 million, approximately $120.4 million to $168.7 million would be spent in the project area. The latter figure was derived through the application of regional location quotients for Standard Industrial Classification deemed pertinent in the construction of highway facilities with total project budgets between $452 million and $633 million.

- *Total employment (person-years)*. According to the U.S. Department of Labor, Wage and Hour Division, prevailing wage rates for selected categories of skilled and unskilled highway construction workers in the two-county impact area average approximately $47,221 per year. This figure includes benefits and assumes a 40-hour work week, as well as 48 weeks of annual employment. Based on this wage rate, the proposed project would result in an estimated construction employment between 5,362 and 7,514 person-years within the two-county region, expended over a 180-month (fifteen-year) period.

The initial change in final demand generated by construction expenditures for local labor and suppliers of construction materials will generate a multiplier effect. Application of the appropriate output, employment and income multipliers results in the following total estimated regional economic impact generated by the construction project after successive rounds of the multiplier effect:

- *Total sales output multipler impacts*, a total of $221.0 to $309.6 million in local sales (output), which include $37.4 to $52.4 million direct labor spending multiplier and $183.6 to $257.3 million material purchase sales multiplier impacts.

- *Total employment multiplier impacts,* between 5,362 and 7,514 person-years of total employment, which includes 1,721 to 2,412 direct employment, 704 to 987 direct labor employment multiplier, and 2,937 to 4,115 material purchases employment multiplier impacts.

- *Total income impacts,* a total $96.0 to $134.5 million in total income (earnings), which includes $43.3 to $60.7 million direct labor income (local net take-home wages), $8.6 to

TABLE 4-29
SUMMARY OF CONSTRUCTION SALES, EMPLOYMENT AND INCOME GENERATION ASSOCIATED WITH THE FREEWAY AND EXPRESSWAY ALTERNATES

Alternates	Total Construction Budget (Dollars in Millions	Total Sales Impact (Dollars in Millions)	Total Employment Impact	Total Income Impact (Dollars in Millions)
1: Longhollow Freeway w/North Simmons Mound	$579.8	$283.8	6,886	$123.3
2: Longhollow Freeway w/South Simmons Mound*	$577.4	$282.6	6,857	$122.8
3: Irish Hollow Freeway w/North Simmons Mound	$620.6	$303.7	7,371	$132.0
4: Irish Hollow Freeway w/South Simmons Mound	$618.2	$302.5	7,342	$131.5
5: Irish Hollow Tunnel Freeway w/North Simmons Mound	$632.7	$309.6	7,514	$134.5
6: Irish Hollow Tunnel Freeway w/South Simmons Mound	$630.3	$308.4	7,485	$134.0
7: Upper Irish Hollow Freeway w/North Simmons Mound	$611.0	$299.0	7,256	$129.9
8: Upper Irish Hollow Tunnel Freeway w/North Simmons Mound	$623.0	$304.9	7,399	$132.5
9: Upper Irish Hollow Freeway w/South Simmons Mound	$608.6	$297.8	7,227	$129.4
10: Upper Irish Hollow Tunnel Freeway w/South Simmons Mound	$620.6	$303.7	7,370	$132.0
11: Expressway South Eleroy	$451.5	$221.0	5,362	$96.0
12: Expressway North Eleroy	$475.1	$232.5	5,643	$101.0

Source: The Louis Berger Group, Inc., 2000.
* The Preferred Alternate is highlighted.

$12.0 million from the direct labor income multiplier, and $44.1 to $61.8 million from the material purchases multiplier impacts.

This total economic impact includes the indirect stimulative effect of the project for supplying industries and the induced local effect of construction labor's expenditure of net take-home wages on household goods and services. Detailed information relating to the impacts on the regional and local economy of each Alternate is provided in Appendix M as Tables M-1 through M-12.

4.1.7 Tax Revenue

Project-related construction would remove assessed land and buildings from the local tax base. Each alternate would have a short term adverse effect on local property tax receipts. A tax revenue loss analysis was prepared for each taxing district in the two-county area. The effect on property tax revenue was calculated by determining the approximate value of land being taken and market value of structures removed from the taxing units for each alternate. Tables M-13 through M-21 in Appendix M present the tax revenue loss by tax district in Jo Daviess and Stephenson Counties by Alternate.

The equalized assessed value of land is derived by multiplying the total area of net right-of-way to be acquired by an average agricultural economic value of $38 per hectare ($95 per acre) for Jo Daviess County and $64 per hectare ($157 per acre) for Stephenson County. The market value of structures is generated by multiplying the number of structures displaced for each alternate by an average of $55,000 for residences, $100,000 for commercial buildings and $25,000 for farm buildings. The market value of structures is then multiplied by a factor of 0.333 to yield estimated equalized value of properties.

The equalized assessed value of land and property removed by the highway in each taxing unit were added, divided by 100, and then multiplied by 1997 tax rates to produce an estimated revenue loss in 1997 dollars. This figure is divided by the billed revenue of each unit to derive a percentage of 1997 revenue that would be lost from the construction of the highway. Table 4-30 summarizes the tax revenue loss in Jo Daviess and Stephenson Counties by Alternate, as well as the percent tax loss by county by Alternate.

As presented in Tables M-13 through M-21, Alternates 11 and 12 would result in larger revenue losses than Alternates 1-10 in the two-county area, at over $100,000 1997 dollars, primarily due to the displacements of commercial buildings. Among them, Alternate 11 would lead to a total tax revenue loss of over $107,000 1997 dollars, the highest among the Alternates.

In contrast, the tax revenue losses generated by Alternates 1 - 10 would be less than $70,000 in 1997 dollars. Among them, Alternate 1 would lead to the smallest revenue loss, at $57,308 1997 dollars; while Alternates 3 and 7 would create the largest tax revenue loss of nearly $70,000 1997 dollars. In terms of revenue loss percentage, under Alternates 1 - 10, 34 of the 38 affected tax districts would experience less than or equal to one percent loss of tax revenue from any of Alternates 1-10. For Alternates 11 and 12, 27 of the 35 affected tax districts would experience less than or equal to one percent loss of tax revenue from either of the two alternates. Erin Township in Stephenson County, would have the highest percentage (2.6 percent) in revenue loss for Alternates 1-10. For Alternates 11 and 12, Kent Township in Stephenson County, would have the greatest percent (3.9 and 3.2 percent respectively) loss of revenue.

TABLE 4-30
TAX REVENUE LOSS IN 1997 DOLLARS BY ALTERNATE

Alternates	Sub-Total, Jo Daviess County	Sub-Total, Stephenson County	Total, Two-County Area	% Tax Loss	
				Jo Daviess County	Stephenson County
1: Longhollow Freeway w/North Simmons Mound	$39,652	$17,655	$57,308	1.4	0.004
2: Longhollow Freeway w/South Simmons Mound*	$41,444	$20,862	$62,306	1.5	0.005
3, 7: Irish Hollow/Upper Irish Hollow Freeway w/North Simmons Mound	$50,723	$18,898	$69,621	1.8	0.004
4, 9: Irish Hollow/Upper Irish Hollow Freeway w/South Simmons Mound	$47,432	$18,904	$66,336	1.7	0.004
5, 8: Irish Hollow/Upper Irish Hollow Tunnel Freeway w/North Simmons Mound	$48,289	$19,175	$67,464	1.7	0.004
6, 10: Irish Hollow/Upper Irish Hollow Tunnel Freeway w/South Simmons Mound	$45,429	$19,179	$64,608	1.6	0.004
11: Expressway South Eleroy	$58,646	$48,485	$107,131	2.1	0.01
12: Expressway North Eleroy	$58,537	$45,766	$104,303	2.1	0.01

Source: The Louis Berger Group, Inc., 2002.
Note: Tax loss information for each taxing district, by Alternate, is found in Appendix M.
* The Preferred Alternate is highlighted.

4.1.8 Land Use and Development Trends

The types of land use impacts discussed below include conversion of certain types of land uses to highway/transportation use, land use development, and conformity with local land use plans and zoning ordinances. Land use development issues are summarized below.

4.1.8.1 Land Use Conversion and Development

Land uses converted to highway use include any land which will be acquired in order to construct the project. The character of the land use impacts of the project can be conveyed by considering land cover, which means the type of geographic feature found on the land. Land cover includes, for example, forests, cropland, wetlands of various types, water, or developed land. The distinction between land use and land cover is minor. Land use usually considers the use of parcels of land, while land cover occurs irrespective of ownership.

Table 4-31 presents the types of land cover which will be converted by the proposed project, by Alternate. The total land to be acquired would generally be between 1,094 and 1,215 hectares (2,700 and 3,000 acres). The smallest amount of land would be required for Alternates 11 and 12. Alternates 11 and 12 would be constructed within the existing U.S. Route 20 right-of-way for some of its distance, thereby saving some land acquisition. Among Alternates 1-10, Alternates 1 and 2 would require the least amount of land (around 1,113 hectares [2,750 acres]), while Alternates 3 and 4 would require the most land. Alternates 3 and 4 are the longest, while Alternates 1 and 2 are shortest.

The vast majority of land to be acquired for any of the Alternates would be agricultural, namely pasture, cropland, or "other" agricultural, which consists mostly of land used for fencing. Nearly 90 percent of the land used for the proposed project will be agricultural. Nearly 10 percent of the land to be acquired for the project would be forested. On the other hand, developed land would account for a very minor portion of total land to be acquired for the project (less than *5* percent in most cases). Alternates 11 and 12 would require more developed land than the other Alternates because they would be constructed partly along the old U.S. Route 20, on which there is existing development. The other Alternates would mostly be constructed away from the existing roadway system.

New development in the vicinity of U.S. Route 20 is restricted almost entirely to those locations which have existing development and have intersecting state highways. This reflects the fact that most new development can take place only where other factors besides highways are present. In already-developed areas, new development may be encouraged by existing infrastructure (water and sewer services) and markets (population and highway traffic). The principal areas where new commercial development is currently taking place near U.S. Route 20 are:

- Along old U.S. Route 20 east of Galena. Commercial development is taking place between Galena and the eastern terminus of sewer service at Boges Street, approximately one mile west of the proposed interchange at Horseshoe Mound. Plans do not currently exist to extend sewer service further to the east from Galena.

- Along Illinois Route 73 south of Lena. A new 4-hectare (10-acre) shopping center is being proposed on the west side of Illinois Route 73, within 1.6 kilometers (1.0 mile) of proposed U.S. Route 20 interchanges. Sewer service will be extended south from Lena to serve this shopping area. Several stores already exist in this area. Two self-storage

TABLE 4-31
U.S. ROUTE 20 LAND COVER CONVERSION TO HIGHWAY USE

Acres of Land Cover by Alternate:

	Pasture	*Cropland*	*Other Agriculture*	*Forest*	*Open*	*Water*	*Developed Land*	*TOTAL**
Alternate 1	702.7	1,674.4	4.8	281.2	12.0	2.9	66.2	2,744.2
Alternate 2**	694.9	1,694.4	4.8	280.6	11.9	2.9	70.1	2,759.6
Alternate 3	635.3	1,944.8	4.8	265.9	14.8	3.5	68.8	2,937.9
Alternate 4	627.5	1,964.8	4.8	265.3	14.7	3.5	72.7	2,953.3
Alternate 5	649.8	1,895.6	4.8	249.4	14.8	7.1	71.8	2,893.3
Alternate 6	642.0	1,915.6	4.8	248.8	14.7	7.1	75.7	2,908.7
Alternate 7	640.8	1,803.7	4.8	292.6	20.8	3.0	87.1	2,852.8
Alternate 8	655.3	1,754.5	4.8	276.1	20.8	6.6	90.1	2,808.2
Alternate 9	633.0	1,823.7	4.8	292.0	20.7	3.0	91.0	2,868.2
Alternate 10	647.5	1,774.5	4.8	275.5	20.7	6.6	94.0	2,823.6
Alternate 11	619.7	1,590.5	0.7	291.4	40.1	3.1	181.6	2,727.1
Alternate 12	640.3	1,562.9	0.7	299.5	37.9	3.1	156.3	2,700.7

Percent of Land Cover by Alternate:

	Pasture	*Cropland*	*Other Agriculture*	*Forest*	*Open*	*Water*	*Developed Land*	*TOTAL**
Alternate 1	25.6%	61.0%	0.2%	10.2%	0.4%	0.1%	2.4%	100.0%
Alternate 2**	25.2%	61.4%	0.2%	10.2%	0.4%	0.1%	2.5%	100.0%
Alternate 3	21.6%	66.2%	0.2%	9.1%	0.5%	0.1%	2.3%	100.0%
Alternate 4	21.2%	66.5%	0.2%	9.0%	0.5%	0.1%	2.5%	100.0%
Alternate 5	22.5%	65.5%	0.2%	8.6%	0.5%	0.2%	2.5%	100.0%
Alternate 6	22.1%	65.9%	0.2%	8.6%	0.5%	0.2%	2.6%	100.0%
Alternate 7	22.5%	63.2%	0.2%	10.3%	0.7%	0.1%	3.1%	100.0%
Alternate 8	23.3%	62.5%	0.2%	9.8%	0.7%	0.2%	3.2%	100.0%
Alternate 9	22.1%	63.6%	0.2%	10.2%	0.7%	0.1%	3.2%	100.0%
Alternate 10	22.9%	62.8%	0.2%	9.8%	0.7%	0.2%	3.3%	100.0%
Alternate 11	22.7%	58.3%	0.0%	10.7%	1.5%	0.1%	6.7%	100.0%
Alternate 12	23.7%	57.9%	0.0%	11.1%	1.4%	0.1%	5.8%	100.0%

*Not including unmapped areas.
**The Preferred Alternate is highlighted.

Source: The Louis Berger Group, Inc., 2001.

warehouses have also been developed south of the intersection of old U.S. Route 20 and Illinois Route 73.

Occasional commercial development is occurring outside of these areas, but it is non-contiguous. Examples are an antique mall about 457 meters (1,500 feet) east of the proposed Horseshoe Mound interchange, and an expansion of the Kolb-Lena Cheese Company production facility at old U.S. Route 20 and Sunnyside Road between Stockton and Lena.

Residential development is taking place primarily in the vicinity of Galena, in the Galena Territory, and in Freeport. Subdivisions in these areas are served by municipal water and sewerage. A duplex development is under construction in Stockton on U.S. Route 20 across from the intersection with Illinois Route 78, south. Several existing platted lots are also being filled with new housing in this vicinity. Lower-density residential development is taking place south of Elizabeth, on two-hectare (five-acre) lots located east of Pleasant Hill Road.

Development and rebuilding of farm structures is also taking place throughout the project area, indicative of the healthy state of agriculture.

4.1.8.2 Conformity With Land Use Plans and Zoning

Land use plans have been recently updated in both Jo Daviess and Stephenson Counties. The updated Future Land Use Plan for Stephenson County identifies the proposed U.S. Route 20 Alternates on the future land use maps[9]. The Jo Daviess County Comprehensive Plan notes that the proposed project is being planned, and that the project is "of major interest"[10]. A Draft Statement of Goals and Objectives in the Jo Daviess Plan stresses the need for job creation and economic development, but does not specifically identify the proposed project. The emphasis in the goals statements was on scenic beauty protection, agricultural preservation, and preservation of rural character and quality of life.[11]

However, the Overall Economic Development Plan for Jo Daviess County specifically mentions the need for the proposed project. This Plan, which was developed by a 30-member committee comprised of representatives from business and government, states as a county goal, "Support Highway 20 development".[12]

According to the updated Stephenson County Comprehensive Plan, "the construction of a new four lane divided U.S. Route 20 Freeway west of Freeport represents the highest priority transportation planning item for the region". The County's Future Land Use Plan has been designed to work with either the Freeway or Expressway Alternates, although the county has identified its preference for the Freeway Alternate. According to the Plan, "the Freeway Alternate reinforces the Primary Future Land Use Plan Goals listed in Chapter 3" of the plan. These goals are:

- "Investment. To provide a framework for private investment and development".
- "Infrastructure. To promote efficient and cost effective public infrastructure systems, like streets, sewers, water mains, etc., which are required to service future private investment in land use development"; and

[9] Stephenson County, Illinois, Future Land Use Plan, July, 2000.
[10] Jo Daviess County Comprehensive Plan Baseline Data, Draft, April, 1998, p. XI-1.
[11] Jo Daviess County Comprehensive Plan, Draft Goals and Objectives, October 27, 1998.
[12] 1997 Overall Economic Development Program, Jo Daviess Development, Inc.

- "Environment. To insure that future private development and public infrastructure projects are in harmony with the natural environment, especially flooding and the preservation of prime agricultural soils".

Since the alignments, ancillary roads and bridges of the proposed Expressway and Freeway Alternates are depicted on the Stephenson County Future Land Use Plan, the proposed project is considered as being consistent with the goals and objectives of the latest County Plan, as adopted July 12, 2000. In addition, since the land use plan restricts uncontrolled development within flood plains, the proposed project is not considered as promoting uncontrolled development in flood hazard areas.

Jo Daviess County adopted its latest update to the Comprehensive Plan on September 14, 1999. The plan contains goals and objectives designed to guide the county's future growth and development. These goals are:

People/Human Resources – Supports the social and human qualities of the county.

Cities and Villages – Encourages viable, vital and vibrant towns.

Economy and Development – Promotes enhancement of the economic base.

Scenic Beauty Protection – Requires protection of scenic beauty, natural areas and features.

Agriculture – Protects the agricultural economy and the agricultural character of the county.

Rural Character/Quality of Life – Protects and encourages rural quality of life.

Natural and Historic Resources – Protects the rare natural and historic resources of the county.

Cooperative Planning – Promotes openness and cooperation in planning between the county and municipalities, public and private agencies and interest groups.

The proposed project is considered to be consistent with the goals and objectives of the Jo Daviess County Comprehensive Plan. Specifically, the proposed project is considered as supporting and enhancing the county's goals for scenic beauty protection, economy and development, rural character and quality of life and cities and villages.

Current zoning along the proposed alternates is uniformly agricultural in Jo Daviess and Stephenson Counties. In neither case are highways identified as prohibited uses.

4.1.9 Environmental Justice

It has been the FHWA's and the Federal Transit Administration's longstanding policy to actively ensure nondiscrimination under Title VI of the *1964 Civil Rights Act* in federally funded activities. Under Title VI and related statutes, each federal agency is required to ensure that no person is excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving federal financial assistance on the basis of race, color, national origin, age, sex, disability, or religion.

On February 11, 1994, President Clinton signed *Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.* The Executive Order requires that each federal agency shall, to the greatest extent allowed by law,

administer and implement its programs, policies, and activities that affect human health or the environment so as to identify and avoid "disproportionately high and adverse" effects on minority and low-income populations.

In April 1997, the Department issued the *DOT Order on Environmental Justice to Address Environmental Justice in Minority Populations and Low-Income Populations (DOT Order 5610.2)* to summarize and expand upon the requirements of Executive Order 12898 on Environmental Justice. The Order generally describes the process for incorporating environmental justice principles into all Department existing programs, policies, and activities.

The three fundamental environmental justice principles are:

- To avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority populations and low-income populations.

- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.

- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations.

This analysis is being done to fulfill the requirements of Executive Order No. 12898 in an effort to determine whether any minority and low-income populations are located within the project area. The potential for disproportionately high or adverse impacts due to the proposed project will be identified. Data from the 2000 Census will be evaluated to determine if the project area contains minority or low-income populations. The Health and Human Services (HHS) Poverty Guidelines (February 14, 2002) and the 2000 Census low-income statistics will be used to determine income status of groups within the project area. HHS defines low-income for a family of four as income below $18,100. The project area is defined as land within one-half mile of the proposed alternate alignments.

4.1.9.1 Identification and Comparison of Minority and Low-Income Populations

Table 4-32 illustrates the percentages of minorities within the project area towns and townships, along with the comparative statistics for the years 1990 and 2000. The project area towns have experienced a small increase in minority population growth over the last decade. The percentage of minorities in the project area is slightly above three percent. The highest minority percentages among the 15 municipalities in the project area include Galena with 5.8 percent and West Galena Township with 5.4 percent of the population.

With regard to income, Table 4-33 indicates that Census statistics show an average of 3.1 percent of low-income population throughout the project area towns and villages. Erin Township has the highest statistic of low-income, 8.9 percent, according to the 2000 Census.

4.1.9.2 Public Involvement and Environmental Justice

The Department values public involvement in its plans, programs, and activities. Throughout this project, extensive public involvement programs were implemented, which brought together local community groups, working groups and advisory groups. These groups were intimately involved in determining the location and design of the roadway alternatives and these involvement processes have provided opportunities for community involvement and discussion of project

TABLE 4-32
PERCENTAGE OF MINORITY POPULATIONS[13]
IN PROJECT AREA TOWNS AND THE STATE OF ILLINOIS

Location	1990 Total Population	2000 Total Population	1990 Minority Population (% of Total Population)	2000 Minority Population (% of Total Population)
Rawlins Township	344	360	0 (0.0%)*	0 (0.0%)
Galena City	3,647	3,460	24 (0.7%)	200 (5.8%)
West Galena Township	3,362	3,364	23 (0.7%)	180 (5.4%)
East Galena Township	1,063	1,192	0 (0.0%)	0 (0%)
Guilford Township	411	916	0 (0.0%)	0 (0%)
Rice Township	296	306	0 (0.0%)	0 (0%)
Elizabeth Township	1,050	1,063	0 (0.0%)	0 (0.0%)
Elizabeth Village	641	682	0 (0.0%)	0 (0.0%)
Woodbine Township	661	577	0 (0.0%)	0 (0.0%)
Stockton Township	2,485	2,555	0 (0.0%)	0 (0.0%)
Stockton Village	1,871	1,926	0 (0.0%)	0 (0.0%)
Wards Grove Township	282	280	0 (0.0%)	0 (0.0%)
Kent Township	763	701	0 (0.0%)	0 (0.0%)
Lena Village	2,605	2,887	0 (0.0%)	52 (1.8%)
Erin Township	482	405	0 (0.0%)	0 (0.0%)
Harlem Township	2,344	2,402	37 (1.5%)	77 (3.2%)
State of Illinois	11,430,602	12,419,293	2,905,866 (25.4%)	3,866,356 (31.1%)

Source: U.S. Bureau of the Census, 1990, 2000.

*Census reports of fewer than 10 persons are not disclosed for privacy reasons.

[13] Ibid.

TABLE 4-33
INCOME AND POVERTY

Location	Median Family Income 2000	Percent of Families Below Poverty Level*
Rawlins Township	$86,669	---
Galena City	$44,063	4.3
West Galena Township	$47,368	4.7
East Galena Township	$51,691	---
Guilford Township	$79,611	---
Rice Township	$47,500	---
Elizabeth Township	$45,417	2.9
Elizabeth Village	$41,354	4.5
Woodbine Township	$31,406	6.3
Stockton Township	$45,000	4.8
Stockton Village	$43,173	4.5
Wards Grove Township	$67,857	---
Kent Township	$52,083	1.8
Lena Village	$49,375	2.2
Erin Township	$45,179	8.9
Harlem Township	$60,093	1.6
State of Illinois	$55,545	7.8

Source: U.S. Bureau of the Census, 2000.

*The U.S. Census Bureau poverty level income for a family of four was $17,029 per year in 2000. The Health and Human Services poverty guidelines for 2002 was $18,100 per year for a family of four.

impacts. The public involvement processes have provided important input in the establishment of alignments that bypass population centers thereby avoiding adverse effects on communities. Public involvement processes have been an effective means for adverse impact avoidance. A detailed discussion of the public involvement program is also included in this report. The public involvement processes have not uncovered issues pertaining to environmental justice. There have been no indications of disproportionately high and adverse impacts on protected population groups.

4.1.9.3 Conclusion

Through the use of 1990 and 2000 Census data, field checks, discussions with local officials, and public involvement activities, it has been determined that there are no groups of minority or low-income populations within the project area. The proposed project will not result in any disproportionate impacts to any minority or low-income groups within the project area.

4.2 Agriculture

Analysis of the potential agricultural impacts involved the examination of federal, state, and local regulatory requirements and determination of monetary, land, drainage, and transportation effects. The analysis centered on acreage to be taken for the proposed right of way. This discussion includes the agricultural acres required, affect to prime and important farmlands, soil capability grouping, severed farm operations, severance management zones, landlocked parcels, adverse travel miles, and farm displacements. Agricultural impacts for the Freeway and Expressway Alternates are summarized in Table 4-34.

4.2.1 Agricultural Acres Required

The amount of right of way required for the project depends on which alternate is chosen as shown in Table 4-34. Alternate 5 requires the most right of way — 1,122 hectares (2,773 acres). Alternate 6 almost requires as much right of way — 1,116 hectares (2,757 acres) — as Alternate 5. Alternate 11 requires the least right of way — 996 hectares (2,462 acres) — followed by Alternate 12 and Alternate 2 (the preferred alternate), which require 997 hectares (2,464 acres) and 1,024 hectares (2,530 acres), respectively.

4.2.2 Prime and Important Farmlands Required

The amount of prime farmland required for the project varies depending on the alternate chosen, as shown in Table 4-34. Alternate 9 requires the most prime farmland — 369 hectares (907 acres). Alternate 1 requires the least prime farmland — 334 hectares (821 acres). The Preferred Alternate, Alternate 2, requires 343 hectares (842 acres).

The amount of important farmland required for the project also varies depending on the alternate chosen. Alternate 3 requires the most important farmland — 557 hectares (1,369 acres). Alternate 2 (the preferred) requires the least important farmland — 442 hectares (1,087 acres).

Alternate 3 requires the most prime and important farmland — 917 hectares (2,252 acres). Alternate 2 (the preferred alternate) requires the least prime and important farmland — 785 hectares (1,929 acres).

TABLE 4-34
AGRICULTURAL IMPACTS MATRIX

ALTERNATE	IMPACTS																			
	Right-of-way from Agricultural Resources	Agricultural land	Non-agricultural land	Removed from production	Prime Farmland	Important Farmland	Prime and Important Farmland	Soil Capability Classes (I & II)	Centennial Farms	Severed Parcels		Affected Parcels	Severance Management Zones	Landlocked Parcels		Adverse Travel	Farm Residences Displaced	Other Farm Structures Displace	Agricultural Income Loss*	Jo Daviess County	Stephenson County
	hectare (acre)	hectare (acre)	hectare (acre)	hectare (acre)	hectare (acre)	hectare (acre)	hectare (acre)	hectare (acre)	no.	no.	hectare (acre)	no.	hectare (acre)	no.	hectare (acre)	km (mi)	no.	no.	$1,000	hectare (acre)	hectare (acre)
1	1,059 (2,617)	1,011 (2,517)	23 (56)	18 (44)	334 (821)	453 (1,114)	788 (1,935)	392 (963)	3	114	7,691 (19,004)	74	71 (175)	35	227 (560)	213 (132)	30	97	$731	823 (2,036)	236 (581)
2	1,024 (2,530)	974 (2,428)	24 (58)	18 (44)	343 (842)	442 (1,087)	785 (1,929)	401 (986)	3	98	6,471 (15,989)	67	57 (142)	34	222 (548)	177 (110)	25	85	$709	788 (1,949)	236 (581)
3	1,047 (2,586)	1,016 (2,512)	24 (58)	7 (16)	359 (883)	557 (1,369)	917 (2,252)	416 (1,021)	3	103	6,983 (17,256)	72	73 (180)	35	255 (656)	155 (96)	32	99	$723	811 (2,005)	236 (581)
4	1,040 (2,570)	1,009 (2,494)	24 (60)	7 (16)	368 (904)	546 (1,342)	914 (2,246)	425 (1,044)	3	107	6,993 (17,281)	70	74 (184)	37	265 (654)	171 (106)	31	102	$719	804 (1,989)	236 (581)
5	1,122 (2,773)	1,084 (2,681)	24 (58)	14 (34)	343 (842)	547 (1,344)	890 (2,186)	399 (981)	3	105	7,533 (18,614)	80	71 (176)	29	172 (424)	195 (121)	29	90	$771	886 (2,192)	236 (581)
6	1,116 (2,757)	1,078 (2,663)	24 (60)	14 (34)	351 (863)	536 (1,317)	887 (2,180)	409 (1,004)	3	109	7,543 (18,638)	78	73 (181)	31	171 (422)	209 (130)	28	93	$766	880 (2,176)	236 (581)
7	1,087 (2,686)	1,035 (2,557)	24 (60)	28 (69)	361 (886)	512 (1,257)	872 (2,142)	417 (1,025)	3	101	7,283 (17,996)	79	68 (169)	29	168 (414)	193 (120)	27	88	$749	849 (2,105)	236 (581)
8	1,081 (2,670)	1,022 (2,524)	24 (60)	35 (86)	344 (845)	501 (1,231)	845 (2,076)	401 (985)	3	105	7,293 (18,020)	77	70 (173)	31	167 (412)	208 (129)	26	91	$745	845 (2,089)	236 (581)
9	1,066 (2,633)	1,013 (2,502)	25 (62)	28 (69)	369 (907)	500 (1,229)	869 (2,136)	427 (1,048)	3	110	7,681 (18,979)	76	69 (170)	33	227 (562)	198 (123)	31	94	$735	830 (2,052)	236 (581)
10	1,030 (2,546)	970 (2,398)	25 (62)	35 (86)	352 (866)	490 (1,204)	842 (2,070)	410 (1,008)	3	106	7,431 (18,361)	75	66 (162)	33	223 (552)	196 (122)	29	92	$713	794 (1,965)	236 (581)
11	996 (2,462)	955 (2,344)	16 (40)	32 (78)	344 (845)	471 (1,157)	815 (2,002)	405 (996)	0	110	6,453 (15,946)	85	59 (144)	38	370 (910)	209 (130)	45	125	$686	780 (1,932)	216 (530)
12	997 (2,464)	955 (2,341)	18 (45)	32 (78)	338 (831)	471 (1,157)	809 (1,988)	402 (987)	0	107	6,529 (16,133)	84	64 (157)	42	429 (1,055)	227 (141)	39	124	$686	781 (1,933)	216 (531)

Agricultural Income Loss = Agricultural Resources right-of-way in acres x annual cash receipt per acre (including livestock), where the year 2000 cash receipt per acre for Jo Daviess County is $251 and for Stephenson County is $379. The cash receipt per acres is equal to the crop cash receipts (including livestock) divided by the total farm acres.
The Preferred Alternate is highlighted.

4.2.3 Soil Capability Groupings

The amount of Class I and II soils required for the project varies depending on the alternate chosen. Alternate 9 requires the most Class I and Class II soils — 427 hectares (1,048 acres), of which 179 hectares (435 acres) are from Jo Daviess County and 248 hectares (613 acres) are from Stephenson County. Alternate 1 requires the least Class I and Class II soils — 392 hectares (963 acres) of which 169 hectares (413 acres) are from Jo Daviess County and 223 hectares (550 acres) are from Stephenson County. Alternate 2, the preferred alternate, requires 401 hectares (986 acres) of which 173 hectares (423 acres) are from Jo Daviess County and 228 hectares (563 acres) are from Stephenson County.

4.2.4 Agricultural Land Evaluation and Site Assessment System

The Illinois Department of Agriculture (IDOA) uses the Land Evaluation and Site Assessment (LESA) System to assess general effects to agriculture caused by state and federal projects. Correspondence from IDOA is included in Appendix J. The LESA System consists of two parts: land evaluation and site assessment. The land evaluation system is used to rate the agricultural productivity of farmland as shown by soils information. The Soil Conservation Service determines and provides this information on U.S. Department of Agriculture Form AD-1006, which is derived by implementing regulations from the federal Farmland Protection Policy Act (see Appendix J). The site assessment system considers all other factors relevant to agricultural concerns such as compatibility with agricultural operations, benefits to agriculture, and compatibility with local comprehensive land use plans. The site assessment system was completed by the Illinois Department of Agriculture. LESA results are based on the total right of way acreage. The maximum score that can be received under the LESA evaluation is 300 points. The higher the point value assigned to a particular Alternate, the more viable the Alternate is for agricultural uses and the greater the impact. Alternate 1 scored the highest with a total of 235 points. Alternate 2, the Preferred Alternate, scored the lowest with a total of 210 points. The next lowest point total is Alternate 7 with 220 points. The average point value for all twelve alternates is 228 points.

4.2.5 Conservation Reserve Program

1999 CRP lands affected by the Preferred Alternate (Alternate 2) were approximately 58 hectares (143 acres) out of 13,204 hectares (32,627 acres) – less than one half of one percent. Also, the number of CRP lands is dwindling in Jo Daviess County. According to the Jo Daviess County Farm Service Agency (FSA) office, the increase of CRP land reached a plateau in 1997. The Jo Daviess FSA office anticipates a decline in the number CRP acres in the forthcoming years. In Stephenson County, the CRP lands are also dwindling. From 1995 to 1999 there has been a 31 percent decrease[14] in CRP lands. Therefore, the CRP lands affected by the proposed project, and the Preferred Alternate – Alternate 2 – are very small and inconsequential.

4.2.6 Centennial Farms within the Right of Way

Alternates 1 through 10 may affect three centennial farms, which includes the Preferred Alternate – Alternate 2. Alternates 11 and 12 do not affect any centennial farms. The homes and residences were investigated to ensure that none were listed on the National Register of Historic Places. The number of affected centennial farms is shown in Table 4-34 and depicted on the Environmental Inventory Maps (Appendix N).

[14] Source: USDA FSA—Stephenson County office

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